

IN THE CLAIMS:

1 1. (Currently Amended): A method of pro-actively refreshing credentials by an entity
2 that maintains credentials, the method comprising ~~the steps of:~~

3 a) storing in a memory, a profile collection having at least one credential
4 profile, each credential profile including a credential and related
5 information; and

6 b) ~~causing the stored credential in the credential profile to be examined in~~
7 ~~accordance with a refresh policy; for each credential profile in the profile~~
8 ~~collection:~~

9 e)i) in accordance with at least one criterion of a refresh policy, making
10 a determination, from that credential profile's related information,
11 of whether that ~~comparing at least one criterion of the refresh~~
12 ~~policy with the related information to determine if the credential~~
13 ~~needs to be refreshed;~~

14 d)ii) replacing the stored credential with a new credential in the
15 credential profile if the determination is that the stored credential
16 does need ~~needs~~ to be refreshed; and

17 e)iii) updating the related information of the new credential in the
18 credential profile; ~~and~~

19 ~~f) repeating the steps of c) e) on a next credential profile in the profile~~
20 ~~collection.~~

1 2. (Currently Amended): The method of claim 1, wherein ~~before step a)~~, the method
2 further comprises ~~the steps of~~ creating the profile collection by, for each of at least one
3 needed credential, ~~;~~
4 ~~determining if whether~~ the profile collection includes a credential profile for a that
5 needed credential, exists; and, if not, then:
6 creating an empty credential profile;
7 gathering ~~the that needed~~ credential;
8 storing ~~the that needed~~ credential in the credential profile;
9 obtaining related information including resource constraints on ~~the that needed~~
10 credential; and
11 storing the information in the credential profile; ~~and~~
12 ~~repeating the steps if another credential profile needs to be created.~~

1 3. (Currently Amended): The method of claim 2, wherein ~~the step of obtaining the~~
2 resource constraints ~~is performed~~ are obtained by manual entry of a user.

1 4. (Currently Amended): The method of claim 2, wherein the ~~step of obtaining~~ resource
2 constraints ~~is~~are deduced through access attempts.

1 5. (Currently Amended): The method of claim 2, wherein the ~~step of obtaining~~ resource
2 constraints ~~is~~are obtained from a directory.

1 6. (Currently Amended): The method of claim 2, wherein the ~~step of obtaining~~ resource
2 constraints are~~is~~ obtained from a resource server.

1 7. (Original): The method of claim 2, wherein the stored credential includes a public
2 key identity credential.

1 8. (Original): The method of claim 2, wherein the stored credential includes a group
2 membership credential.

1 9. (Original): The method of claim 2, wherein the stored credential includes a group
2 non-membership credential.

1 10. (Original): The method of claim 2, wherein the stored credential includes a non-
2 revocation credential.

1 11. (Original): The method of claim 2, wherein the stored resource constraints include a
2 recency requirement.

1 12. (Original): The method of claim 2, wherein the stored resource constraints include a
2 trust level.

1 13. (Original): The method of claim 2, wherein the stored resource constraints include a
2 maximum credential chain length.

1 14. (Currently Amended): The method of claim 1, wherein the related information
2 includes ~~storing information on~~ a credential identifier.

1 15. (Currently Amended): The method of claim 1, wherein the related information
2 includes ~~storing information on~~ when the credential was issued.

1 16. (Currently Amended): The method of claim 1, wherein the related information
2 includes ~~storing information on~~ when the credential was last used for a resource access.

1 17. (Currently Amended): The method of claim 1, wherein the related information
2 includes ~~storing~~ information on the resource on which ~~resource~~ the credential was last
3 used.

1 18. (Currently Amended): The method of claim 1, wherein at least one said criterion is
2 such that the method includes refreshing credentials that are older than a certain time
3 period.

1 19. (Currently Amended): The method of claim 1, wherein at least one said criterion is
2 such that the method includes refreshing credentials that were last used within a certain
3 time period.

1 20. (Currently Amended): The method of claim 1, wherein at least one said criterion is
2 such that the method includes refreshing credentials that are older than an associated
3 recency requirement.

1 21. (Currently Amended): The method of claim 1, wherein at least one said criterion is
2 such that the method includes refreshing credentials that are predicted to be used in a next
3 session.

22. (Currently Amended): A processor-~~executable~~-readable medium having instructions contained therein which when executed by a processor causes the processor to execute a method of pro-actively refreshing credentials by an entity that maintains credentials, the method comprising ~~the steps of~~:

- a) storing in a memory, a profile collection having at least one credential profile, each credential profile including a credential and related information; and
- b) ~~causing the stored credential in the credential profile to be examined in accordance with a refresh policy; for each credential profile in the profile collection:~~
 - e)i) in accordance with at least one criterion of a refresh policy, making a determination, from that credential profile's related information, of whether that ~~comparing at least one criterion of the refresh policy with the related information to determine if the credential~~ needs to be refreshed;
 - d)ii) replacing the stored credential with a new credential in the credential profile if the determination is that the stored credential needs to be refreshed; and
 - e)iii) updating the related information of the new credential in the credential profile; ~~and~~

21 ~~f) repeating the steps of c) e) on a next credential profile in the profile~~
22 ~~collection.~~

1 23. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein ~~before step a)~~, the method further comprises creating the profile collection by,
3 for each of at least one needed credential, :
4 determining if whether the profile collection includes a credential profile for a that
5 needed credential, exists; and, if not, then
6 creating an empty credential profile;
7 gathering ~~the~~ that needed credential;
8 storing ~~the~~ that needed credential in the credential profile;
9 obtaining related information including resource constraints on ~~the~~ that needed
10 credential; and
11 storing the information in the credential profile; and
12 ~~repeating the steps if another credential profile needs to be created.~~

1 24. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the ~~step of obtaining~~ resource constraints is ~~performed~~ are obtained by manual
3 entry of a user.

1 25. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the ~~step of obtaining~~ resource constraints ~~is deduced~~ are obtained by deducing
3 them through access attempts.

1 26. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the ~~step of obtaining~~ resource constraints ~~are~~ is obtained from a directory.

1 27. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the ~~step of obtaining~~ resource constraints ~~is~~ are obtained from a resource server.

1 28. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored credential includes a public key identity credential.

1 29. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored credential includes a group membership credential.

1 30. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored credential includes a group non-membership credential.

1 31. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored credential includes a non-revocation credential.

1 32. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored resource constraints include a recency requirement.

1 33. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored resource constraints include a trust level.

1 34. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored resource constraints include a maximum credential chain length.

1 35. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein the related information includes ~~storing information on~~ a credential identifier.

1 36. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein the related information includes ~~storing~~ information on when the credential was
3 issued.

1 37. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein the related information includes ~~storing~~ information on when the credential was
3 last used for a resource access.

1 38. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein the related information includes ~~storing~~ information on the resource on which
3 ~~resource~~ the credential was last used.

1 39. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein at least one said criterion is such that the method includes refreshing credentials
3 that are older than a certain time period.

1 40. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein at least one said criterion is such that the method includes refreshing credentials
3 that were last used within a certain time period.

1 41. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein at least one said criterion is such that the method includes refreshing credentials
3 that are older than an associated recency requirement.

1 42. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein at least one said criterion is such that the method includes refreshing credentials
3 that are predicted to be used in a next session.

1 43. (Original): A system for pro-actively refreshing credentials by an entity that
2 maintains credentials, the system comprising:
3 a memory to store a profile collection having at least one credential profile, each
4 credential profile including a credential and related information;
5 a circuit to read the credential profile;
6 a refresh policy stored in the memory to determine if the credential needs to be
7 refreshed using the related information, wherein the circuit replaces the stored
8 credential with a new credential in the credential profile if the stored credential
9 needs to be refreshed and the circuit updates the related information of the new
10 credential in the credential profile.

1 44. (Currently Amended): The system of claim 43, wherein ~~system further~~
2 ~~comprises~~the circuit is configured to:
3 ~~the circuit configured to~~ determine, for each of at least one needed credential, whether if
4 the profile collection includes a credential profile for athat needed credential, ~~exist~~; and,
5 if not, then

6 ~~the circuit configured to~~ create an empty credential profile in the memory, ~~the~~
7 ~~circuit further configured to~~ gather ~~the~~ that needed credential; and
8 store ~~the~~ that needed credential in the credential profile;;
9 ~~the circuit configured to~~ obtain related information including resource constraints
10 on ~~the~~ that needed credential, and
11 store the information in the credential profile.

1 45. (Original): The system as in claim 44, wherein the circuit is a processor.

1 46. (Currently Amended): The system of claim 44, wherein the resource constraints
2 are obtained by manual entry of a user.

1 47. (Currently Amended): The system of claim 44, wherein the resource constraints is
2 are deduced through access attempts.

1 48. (Currently Amended): The system of claim 44, wherein the resource constraints
2 are obtained from a directory.

1 49. (Currently Amended): The system of claim 44, wherein the resource constraints
2 are obtained from a resource server.

1 50. (Original): The system of claim 44, wherein the stored credential includes a public
2 key identity credential.

1 51. (Original): The system of claim 44, wherein the stored credential includes a group
2 membership credential.

1 52. (Original): The system of claim 44, wherein the stored credential includes a group
2 non-membership credential.

1 53. (Original): The system of claim 44, wherein the stored credential includes a non-
2 revocation credential.

1 54. (Original): The system of claim 44, wherein the stored resource constraints include
2 a recency requirement.

1 55. (Original): The system of claim 44, wherein the stored resource constraints include
2 a trust level.

1 56. (Original): The system of claim 44, wherein the stored resource constraints include
2 a maximum credential chain length.

1 57. (Currently Amended): The system of claim 43, wherein the ~~stored~~related
2 information includes a credential identifier.

1 58. (Currently Amended): The system of claim 43, wherein the related ~~stored~~
2 information includes when the credential was issued.

1 59. (Currently Amended): The system of claim 43, wherein the related ~~stored~~
2 information includes when the credential was last used for a resource access.

1 60. (Currently Amended): The system of claim 43, wherein the related ~~stored~~
2 information includes on which resource the credential was last used.

1 61. (Original): The system of claim 43, wherein the refresh policy refreshes credentials
2 that are older than a certain time period.

1 62. (Original): The system of claim 43, wherein the refresh policy refreshes credentials
2 that were last used within a certain time period.

1 63. (Original): The system of claim 43, wherein the refresh policy refreshes credentials
2 that are older than an associated recency requirement.

- 1 64. (Original): The system of claim 43, wherein the refresh policy refreshes credentials
- 2 that are predicted to be used in a next session.